

REGION 6 EXECUTIVE SUMMARY

TOPIC: Louisiana Offshore Oil Port (LOOP), LLC (WET-only)

DATE: March 2, 2017

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PURPOSE/ACTION NEEDED: Addition of Whole Effluent Toxicity monitoring requirements for brine water discharged at Outfall 004 in the joint EPA/LDEQ issued NPDES/LPDES permit, (LA0049492).

DEADLINE DATE: Need to issue expired permit & requested permit modifications as soon as possible.

BACKGROUND: The existing wastewater permit expired September 30, 2013. Coordination with LDEQ for reissuance of the permit began in February 2014 with EPA review of permit conditions for outfalls in state waters (LDEQ authority) and for permit conditions for outfalls in federal waters (EPA authority). EPA provided input to LDEQ, including the need for biomonitoring requirements at Outfall 004 for the discharge of brine waters, and LDEQ developed a draft permit. EPA concurred on the draft permit in July 2014. The facility commented on the Preliminary Draft Permit opposing the inclusion of biomonitoring requirements. EPA informally concurred with the permittee's view that traditional WET testing is not appropriate for their brine discharge, and has since been working with LDEQ to find an alternative approach to including WET requirements in this permit.

ENVIRONMENTAL/PUBLIC HEALTH CONCERNS: Outfall 004 discharges into Subsegment 021102, Barataria Basin Coastal Bays and Gulf Waters to the State 3mile limit, which is listed in the Final 2016 Integrated Report of Water Quality in Louisiana as not supporting one of its designated uses of fish and wildlife propagation (fishing).

REGULATORY BASIS FOR REQUIRING WET TESTING:

- 40 CFR 122.44(d)(1)(iv): "When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the numeric criterion for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity."
- The maximum TDS concentration of LOOP's brine discharge is 318 parts per thousand. Ambient salinity concentration of seawater is 35 parts per thousand. Note, LOOP is discharging to estuarine waters which have a lower salinity than seawater.
- Due to the high concentration of TDS in LOOP's effluent, and the fact that the receiving water is not supporting one of its designated uses of fish and wildlife propagation, there is reasonable potential for whole effluent toxicity and therefore, this facility needs a WET control in the permit per federal regulations.

TECHNICAL CONCERN:

- *Permittee had expressed that WET testing conditions were incorrectly applied to this outfall since in order to maintain the salinity of the test solutions within the method-specified limits, the samples would be required to be diluted.* Both methods allow the use of hypersaline brine and artificial sea salts to adjust the salinity of a test solution in order to be within the recommended salinity range. This is the only allowed practice of salinity adjustment for test solutions. Salting the effluent/diluent/receiving water is acceptable, but not diluting it past what is necessary to create the test concentrations.
- *Permittee had expressed that CORMIX modeling was incorrectly performed for this outfall.* In 2015, EPA prepared a response for LDEQ and the permittee and updated the model to reflect new information. The critical dilution after updating it was 7.51%. Upon receipt of updated information EPA may again calculate LOOP's critical dilution.

PREVIOUS ALTERNATIVE APPROACHES:

1. Approach: Have the EPA Region 6 Houston Laboratory conduct chronic marine WET testing on LOOP's effluent.
Outcome: The EPA Houston Laboratory will not be able to conduct the tests and there were several concerns related to sampling requirements.
2. Approach: EPA proposed a middle-ground option to LDEQ on September 22, 2016, to have the permittee find a dilution ratio of effluent to receiving water in which the effluent does not result in an observable toxic effect, and propose an action plan to achieve this ratio. This would have been done through quarterly WET testing without a critical dilution.
Outcome: LDEQ staff expressed concerns over the legality of this adjusted WET test since it is not in line with their WQMP WET permitting procedures.

CURRENT OPTIONS:

FOIA ex b(5) - deliberative process

WET REQUIREMENTS IN OTHER EPA (R6) BRINE DISCHARGE PERMITS:

	Bryan Mound Oil Storage TX0074012 (Strategic Petroleum Reserve)	Big Hills Oil Storage TX0092827 (Strategic Petroleum Reserve)	LOOP LA0049492
Flow MGD	2.6 MGD	2.86 MGD	5.13-11.33MGD
Outfall/Type	Brine discharge from 001 to Gulf of Mexico (Texas)	Brine discharge from 001 to Gulf of Mexico (Texas)	Brine discharge from 004 to Gulf of Mexico (Louisiana)
Critical Dilution	2.9%	2.6%	NA
WET Requirement	7day Chronic Marine	7day Chronic Marine	NA
Average TDS	270,148mg/L (270ppth)	145,885mg/L (146ppth)	318,500mg/L (319ppth)
WET Compliance History	16 years of WET testing (In compliance)	10 years of WET testing (In compliance)	NA
Mechanism to control WET	<u>Flow Regulation</u> CORMIX modeling using the MSTR to target a NOEC of 2.9%. Achieved by controlling nozzle exit velocity.	<u>Flow Regulation</u> CORMIX modeling using the MSTR to target a NOEC of 2.6%. Achieved by controlling nozzle exit velocity.	NA

Note: Two additional SPR facilities located in Louisiana are permitted but do not discharge their brine, instead they deep well inject it.



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